

WHAT IS CLAIMED IS:

1. A method for manufacturing a ball grid array package, comprising:
providing a flip chip;
coupling the flip chip to a first side of a substrate;
5 encapsulating the flip chip with a molding;
attaching a plurality of solder balls to a second side of the substrate;
and
cutting the substrate to produce the ball grid array package.
- 10 2. The method of Claim 1, further comprising transferring the ball grid array package to a shipping tray.
- 15 3. The method of Claim 1, wherein providing the flip chip comprises forming an integrated circuit die on a wafer, scribing the wafer to define edges of the flip chip, and coupling a plurality of solder bumps to the integrated circuit die.
- 20 4. The method of Claim 1, wherein coupling the flip chip to the first side of the substrate comprises soldering a plurality of solder bumps coupled to the flip chip to a plurality of solder pads on the first side of the substrate.
- 25 5. The method of Claim 1, wherein encapsulating the flip chip with the molding comprises encapsulating the flip chip by utilizing a transfer molding process.
6. The method of Claim 1, wherein encapsulating the flip chip with the molding comprises encapsulating the flip chip with an epoxy.
- 30 7. The method of Claim 1, wherein cutting the substrate comprises:
cutting the substrate in a first direction; and
after cutting the substrate in the first direction, cutting the substrate in a second direction substantially perpendicular to the first direction.

8. A method for manufacturing a plurality of ball grid array packages, comprising:

providing a plurality of flip chips;

coupling the flip chips to a first side of a substrate;

encapsulating the flip chips with a molding;

attaching a plurality of solder balls to a second side of the substrate;

and

cutting the substrate to produce the ball grid array packages.

9. The method of Claim 8, wherein providing the plurality of flip chips comprises forming a plurality of integrated circuit dies on a wafer, scribing the wafer to define edges of the integrated circuit dies, and coupling a plurality of solder bumps to the integrated circuit dies.

10. The method of Claim 8, coupling the flip chip to the first side of the substrate comprises soldering a plurality of solder bumps coupled to the flip chip to a plurality of solder pads on the first side of the substrate.

11. The method of Claim 8, wherein encapsulating the flip chips with the molding comprises encapsulating substantially all of the flip chips by utilizing a transfer molding process.

12. The method of Claim 8, wherein encapsulating the flip chips with the molding comprises encapsulating the flip chips with an epoxy.

13. The method of Claim 8, wherein cutting the substrate to produce the ball grid array packages comprises:

cutting the substrate in a first direction with a plurality of cutting blades;

rotating the substrate substantially 90 degrees with respect to the cutting blades; and

222	238	254	270	286	302	318	334	350	366	382	398	414	430	446	462	478	494	510	526	542	558	574	590	606	622	638	654	670	686	702	718	734	750	766	782	798	814	830	846	862	878	894	910	926	942	958	974	990	1006	1022	1038	1054	1070	1086	1102	1118	1134	1150	1166	1182	1198	1214	1230	1246	1262	1278	1294	1310	1326	1342	1358	1374	1390	1406	1422	1438	1454	1470	1486	1502	1518	1534	1550	1566	1582	1598	1614	1630	1646	1662	1678	1694	1710	1726	1742	1758	1774	1790	1806	1822	1838	1854	1870	1886	1902	1918	1934	1950	1966	1982	1998	2014	2030	2046	2062	2078	2094	2110	2126	2142	2158	2174	2190	2206	2222	2238	2254	2270	2286	2302	2318	2334	2350	2366	2382	2398	2414	2430	2446	2462	2478	2494	2510	2526	2542	2558	2574	2590	2606	2622	2638	2654	2670	2686	2702	2718	2734	2750	2766	2782	2798	2814	2830	2846	2862	2878	2894	2910	2926	2942	2958	2974	2990	3006	3022	3038	3054	3070	3086	3102	3118	3134	3150	3166	3182	3198	3214	3230	3246	3262	3278	3294	3310	3326	3342	3358	3374	3390	3406	3422	3438	3454	3470	3486	3502	3518	3534	3550	3566	3582	3598	3614	3630	3646	3662	3678	3694	3710	3726	3742	3758	3774	3790	3806	3822	3838	3854	3870	3886	3902	3918	3934	3950	3966	3982	3998	4014	4030	4046	4062	4078	4094	4110	4126	4142	4158	4174	4190	4206	4222	4238	4254	4270	4286	4302	4318	4334	4350	4366	4382	4398	4414	4430	4446	4462	4478	4494	4510	4526	4542	4558	4574	4590	4606	4622	4638	4654	4670	4686	4702	4718	4734	4750	4766	4782	4798	4814	4830	4846	4862	4878	4894	4910	4926	4942	4958	4974	4990	5006	5022	5038	5054	5070	5086	5102	5118	5134	5150	5166	5182	5198	5214	5230	5246	5262	5278	5294	5310	5326	5342	5358	5374	5390	5406	5422	5438	5454	5470	5486	5502	5518	5534	5550	5566	5582	5598	5614	5630	5646	5662	5678	5694	5710	5726	5742	5758	5774	5790	5806	5822	5838	5854	5870	5886	5902	5918	5934	5950	5966	5982	5998	6014	6030	6046	6062	6078	6094	6110	6126	6142	6158	6174	6190	6206	6222	6238	6254	6270	6286	6302	6318	6334	6350	6366	6382	6398	6414	6430	6446	6462	6478	6494	6510	6526	6542	6558	6574	6590	6606	6622	6638	6654	6670	6686	6702	6718	6734	6750	6766	6782	6798	6814	6830	6846	6862	6878	6894	6910	6926	6942	6958	6974	6990	7006	7022	7038	7054	7070	7086	7102	7118	7134	7150	7166	7182	7198	7214	7230	7246	7262	7278	7294	7310	7326	7342	7358	7374	7390	7406	7422	7438	7454	7470	7486	7502	7518	7534	7550	756
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14. A system for manufacturing a plurality of ball grid array packages,
comprising:

a substrate having a first side and a second side;

a plurality of flip chips coupled to the first side of the substrate;

5 a molding encapsulating the flip chips;

a plurality of solder balls coupled to the second side of the substrate;

and

a cutting machine operable to singulate the ball grid array packages by
cutting the substrate.

15. The system of Claim 14, further comprising a shipping tray operable to
accept the ball grid array packages for shipping.

16. The system of Claim 14, wherein the plurality of flip chips comprises a
plurality of integrated circuit dies formed on a wafer, and a plurality of solder bumps
coupled to the integrated circuit dies.

17. The system of Claim 14, wherein the plurality of flip chips are coupled
to the first side of the substrate by soldering a plurality of solder bumps on the flip
chips to a plurality of solder pads on the first side of the substrate.

18. The system of Claim 14, wherein the molding is an epoxy.

19. The system of Claim 14, wherein the cutting machine comprises a
plurality of cutting blades.

20. The system of Claim 14, further comprising a work table operable to
rotate the substrate at least substantially 90 degrees.